SRF-PSY03

SERVICE MANUAL

US Model

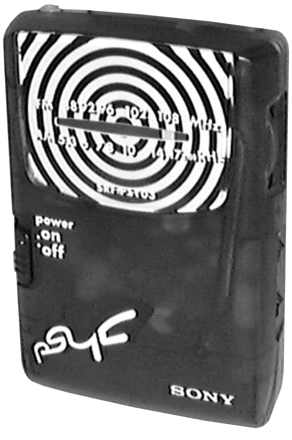


Photo: Violet model

SPECIFICATIONS

Frequency range
FM: 87.5 – 108 MHz
AM: 530 – 1,710 kHz

Output
Ω (Headphones) jack (stereo minijack)

Power output
3.6 mW + 3.6 mW (at 10% harmonic distortion) with headphones having impedance of 24 ohms

Power requirements
1.5 V DC, one size AA (R6) battery

Dimensions
Approx. 63 × 92.9 × 26.2 mm (w/h/d) ($2\frac{1}{2} \times 3\frac{3}{4} \times 1\frac{1}{16}$ in) (not incl. guard)

Mass
Main unit: approx. 85g (3 oz) incl. a battery
Guard: approx. 34g (1.2 oz)

Accessories supplied
Stereo headphones (1)
Guard (1)
Chain (1)

Design and specifications are subject to change without notice.

FM STEREO/AM RADIO

MICROFILM

SONY®

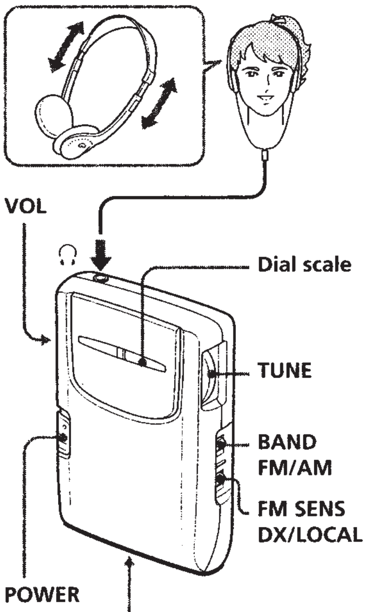
TABLE OF CONTENTS

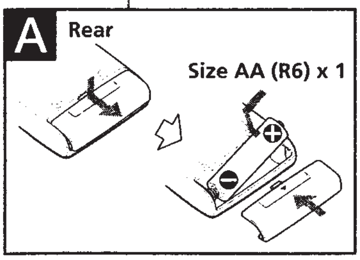
Notes on chip component replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

SECTION 1
GENERAL

This section is extracted from instruction manual.





Installing the Battery (See Fig. A)

1 Detach the guard. (See Fig. B)
2 Open the battery compartment lid at the rear of the radio.
3 Insert one size AA (R6) battery (not supplied) with the ⊕ and ⊖ marks aligned correctly.
4 Close the battery compartment lid.

Battery life

Using Sony size AA (R6) battery:
Approx. 40 hours

When to replace the battery

Replace the battery when the sound becomes weak or distorted. Remove the old battery and insert a new one.

Notes on the battery

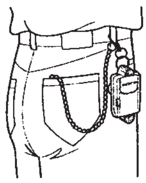
- Align the battery correctly.
- The dry battery cannot be charged.
- To avoid damage from possible battery leakage, remove the battery when unit will not be used for a long time.

Playing the Radio

1 Connect the supplied headphones to ☊ (headphones) jack and adjust them to your head.
2 Set **POWER** to **ON** to turn on the radio.
3 Set **BAND** to select **FM** or **AM.**
4 Turn **TUNE** to tune in a station.
5 Adjust **VOL** (volume).

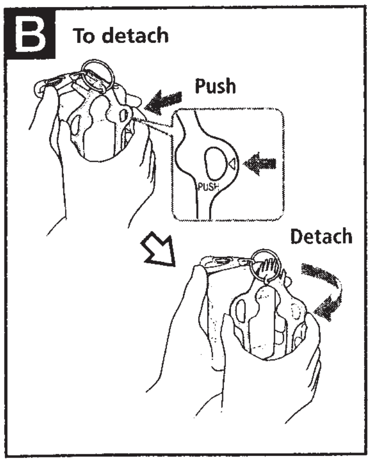
- To turn off the radio, set **POWER** to **OFF**.
- To improve reception
  FM: Extend the headphones cord which functions as the FM antenna.
  AM: Rotate the unit horizontally for optimum reception. A ferrite bar antenna is built in the unit.
- Set **FM SENS** to **LOCAL** if interference is prevalent when radio wave intensity is dramatically stronger.
  To listen to stereo programs, set to **DX**.

Using the Guard and Chain



Note

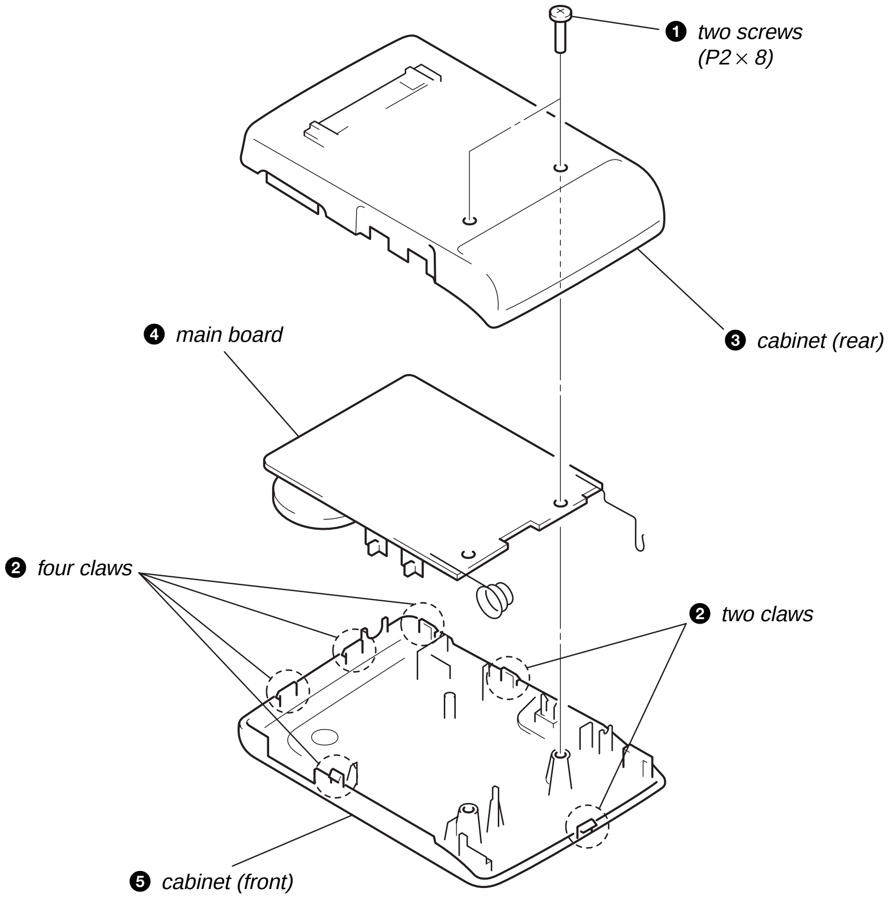
Use of this chain may cause scratching of the unit in normal use.



SECTION 2
DISASSEMBLY

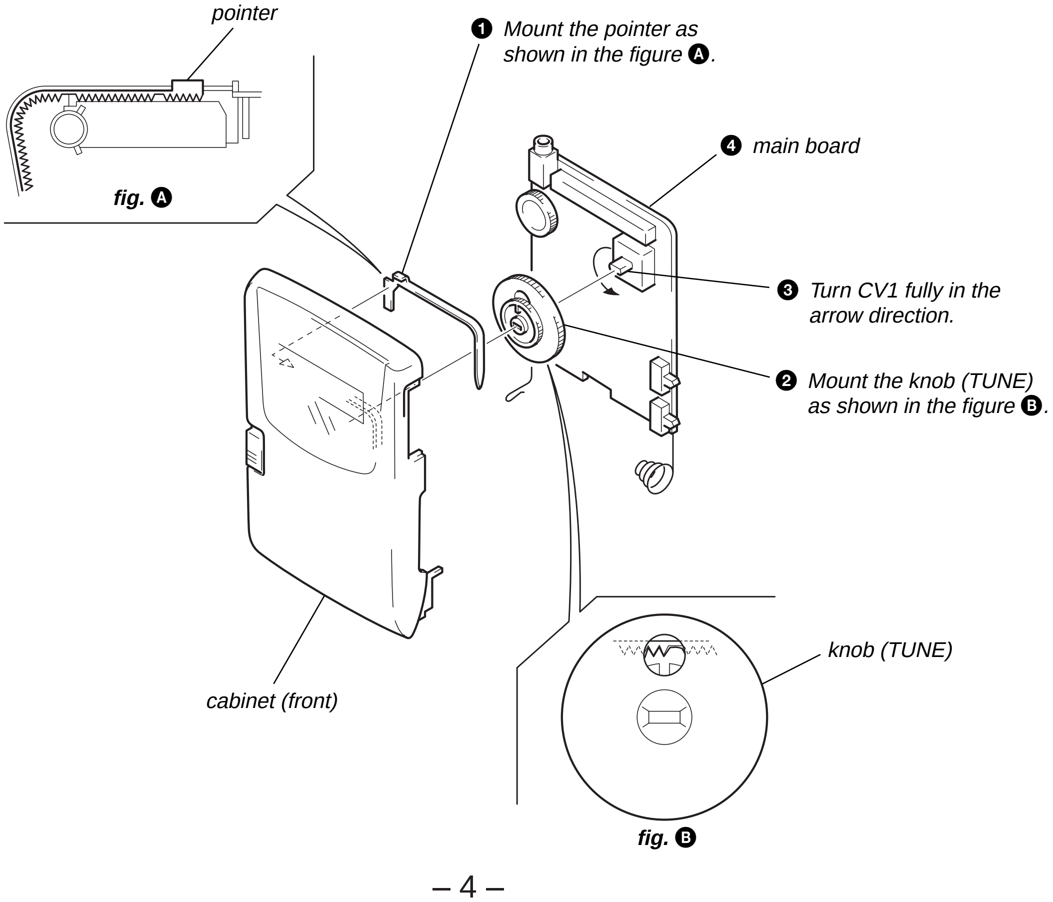
Note: Follow the disassembly procedure in the numerical order given.

MAIN BOARD



DIAL POINTER SETTING

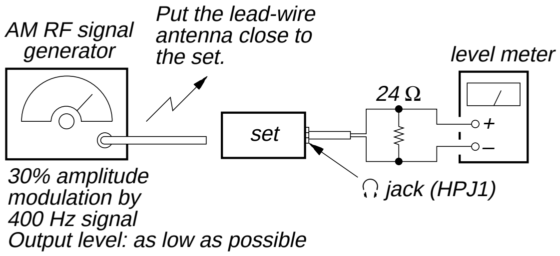
Note: Follow the assembly procedure in the numerical order given.



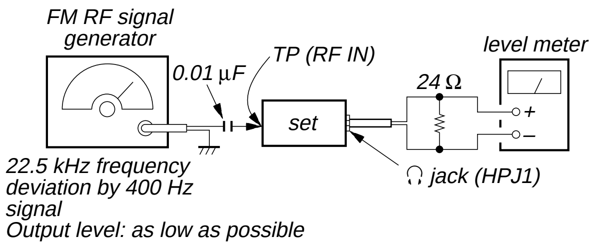
SECTION 3
ELECTRICAL ADJUSTMENTS

0 dB = 1 μV

[AM]
Setting:
BAND switch: AM



[FM]
Setting:
BAND switch: FM



- Repeat the procedures in each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the timmer capacitors.

AM FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on level meter	
L3	520 kHz
CT1 (3/4)	1,750 kHz

AM TRACKING ADJUSTMENT	
Adjust for a maximum reading on level meter	
L5	600 kHz
CT1 (4/4)	1,400 kHz

FM FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on level meter	
L6	86.5 MHz
CT1 (1/4)	109.5 MHz

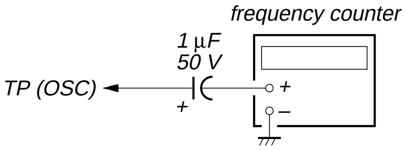
FM TRACKING ADJUSTMENT	
Adjust for a maximum reading on level meter	
L1	86.5 MHz
CT1 (2/4)	109.5 MHz

2nd Local Frequency (57.1 MHz) Adjustment
Setting:
BAND switch: FM

Procedure:
1. Connect the frequency counter to TP (OSC).
2. Adjust L2 for 56.75 MHz reading on the frequency counter.

Specification values: 56.5 to 57.0 MHz

Connection:

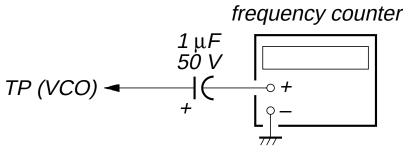


FM STEREO (38 kHz) Adjustment
Setting:
BAND switch: FM

Procedure:
1. Connect 10 μF Capacitor between TP (38 kHz) and TP (GND).
2. Connect the frequency counter to TP (VCO).
3. Adjust L4 for 38 kHz reading on the frequency counter.
4. Disconnect 10 μF Capacitor in step 1.

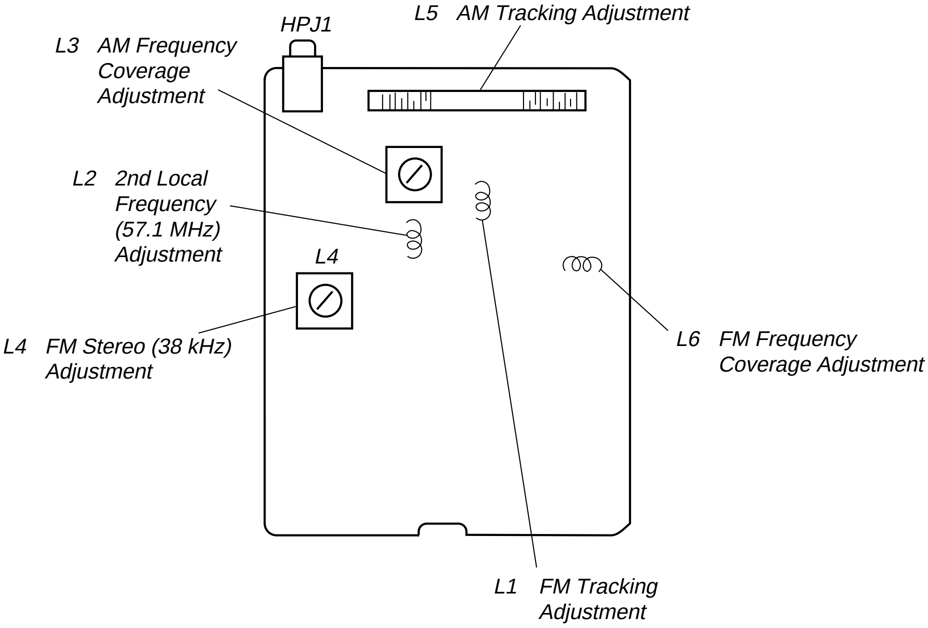
Specification values: 37.95 to 38.05 kHz

Connection:

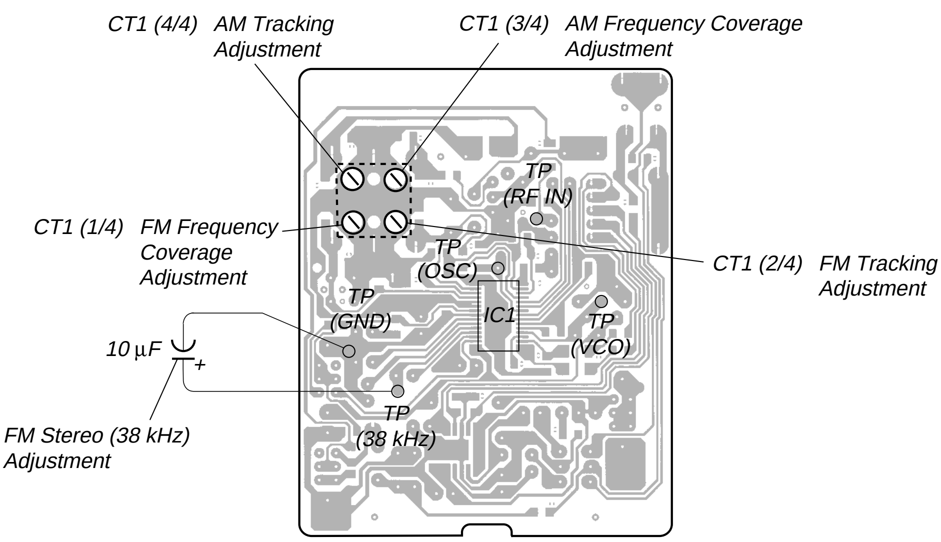


Adjsutment Location:

– MAIN BOARD (Component Side) –

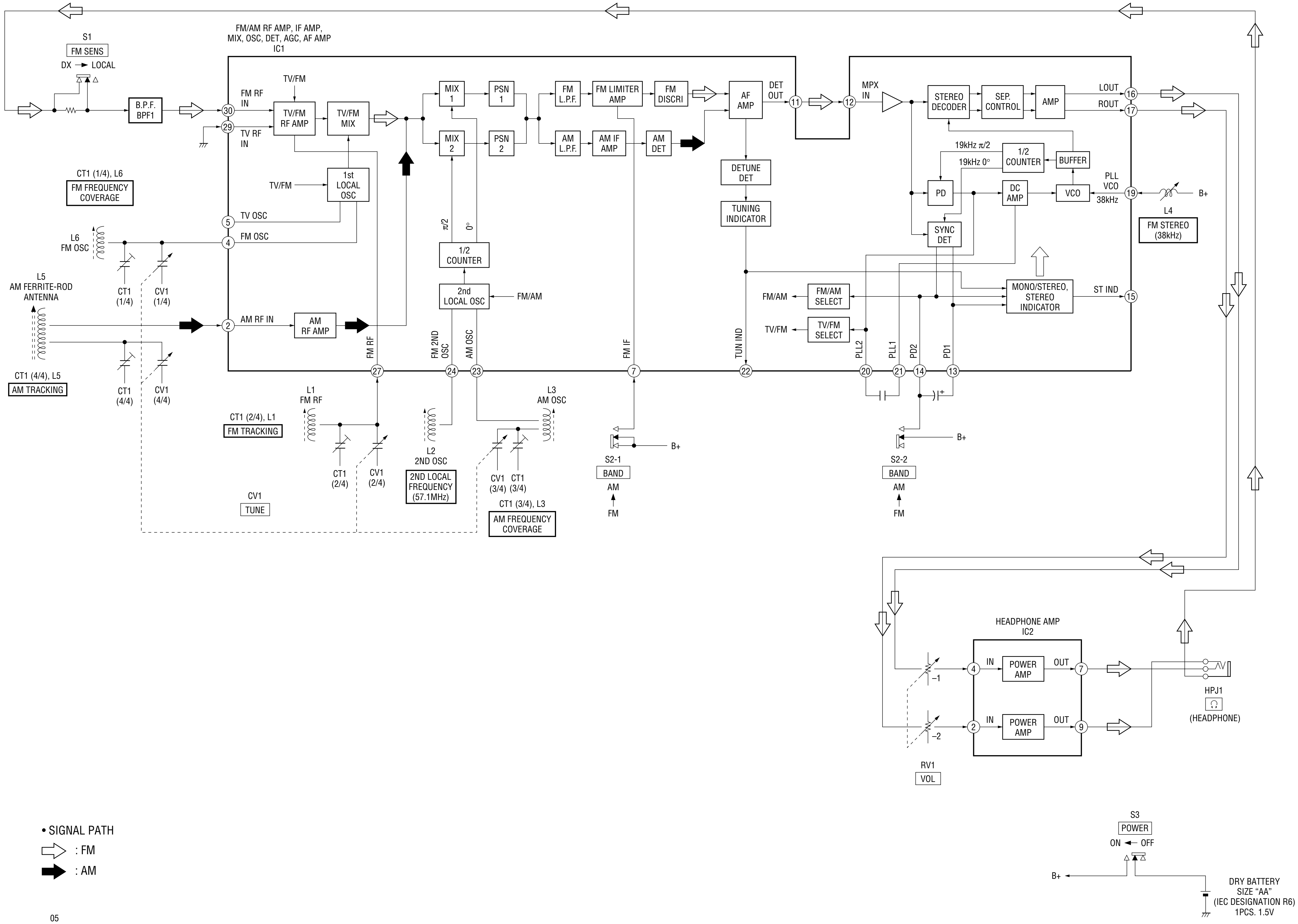


– MAIN BOARD (Conductor Side) –



SECTION 4
DIAGRAMS

4-1. BLOCK DIAGRAM



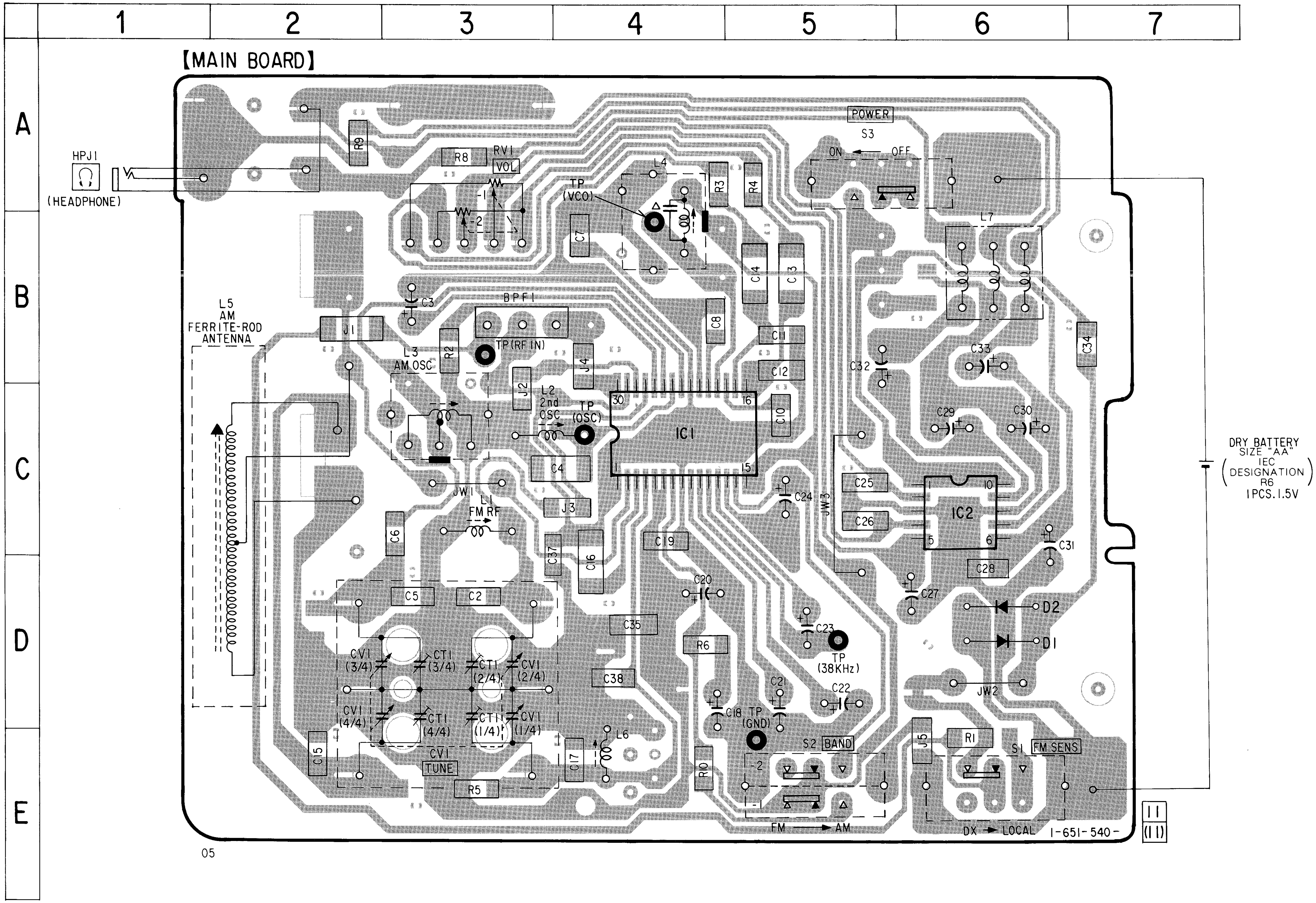
• SIGNAL PATH
⇨ : FM
➡ : AM

05

4-2. PRINTED WIRING BOARD

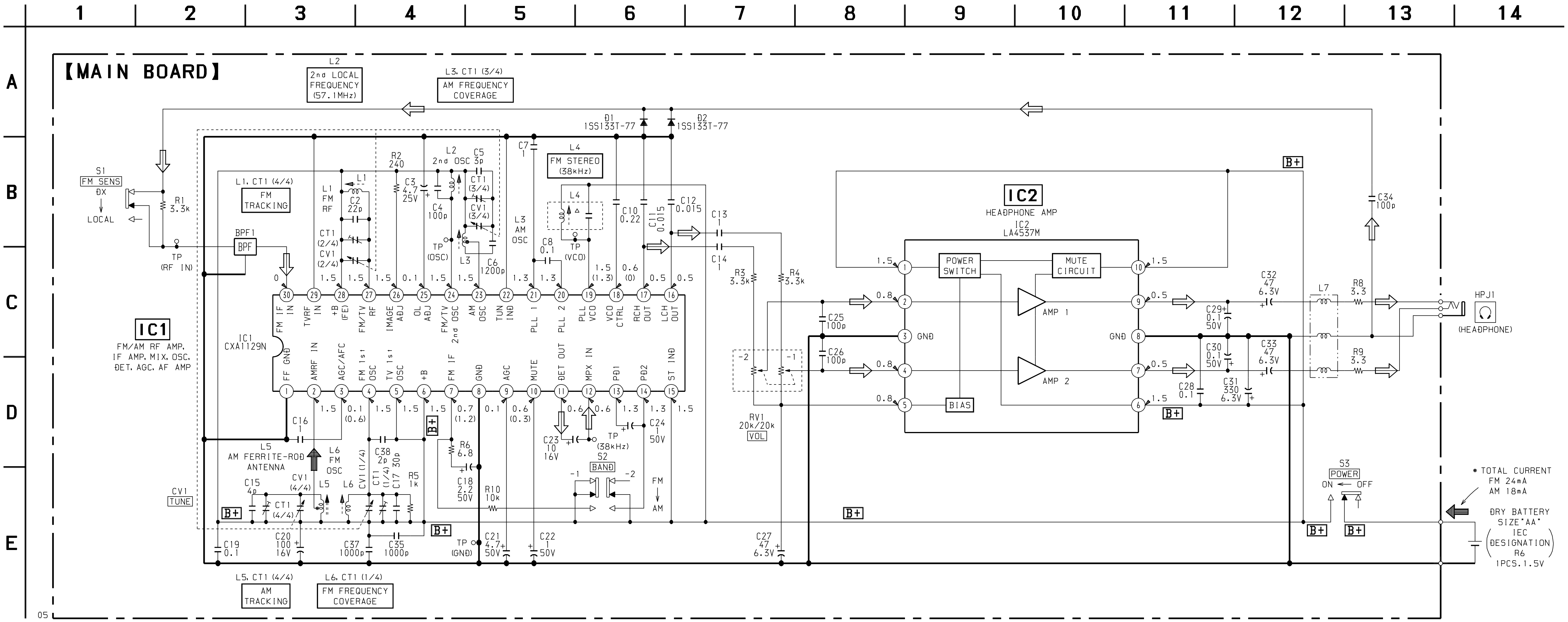
- **Semiconductor Location**

Ref. No.	Location
D1	D-6
D2	D-6
IC1	C-4
IC2	C-6



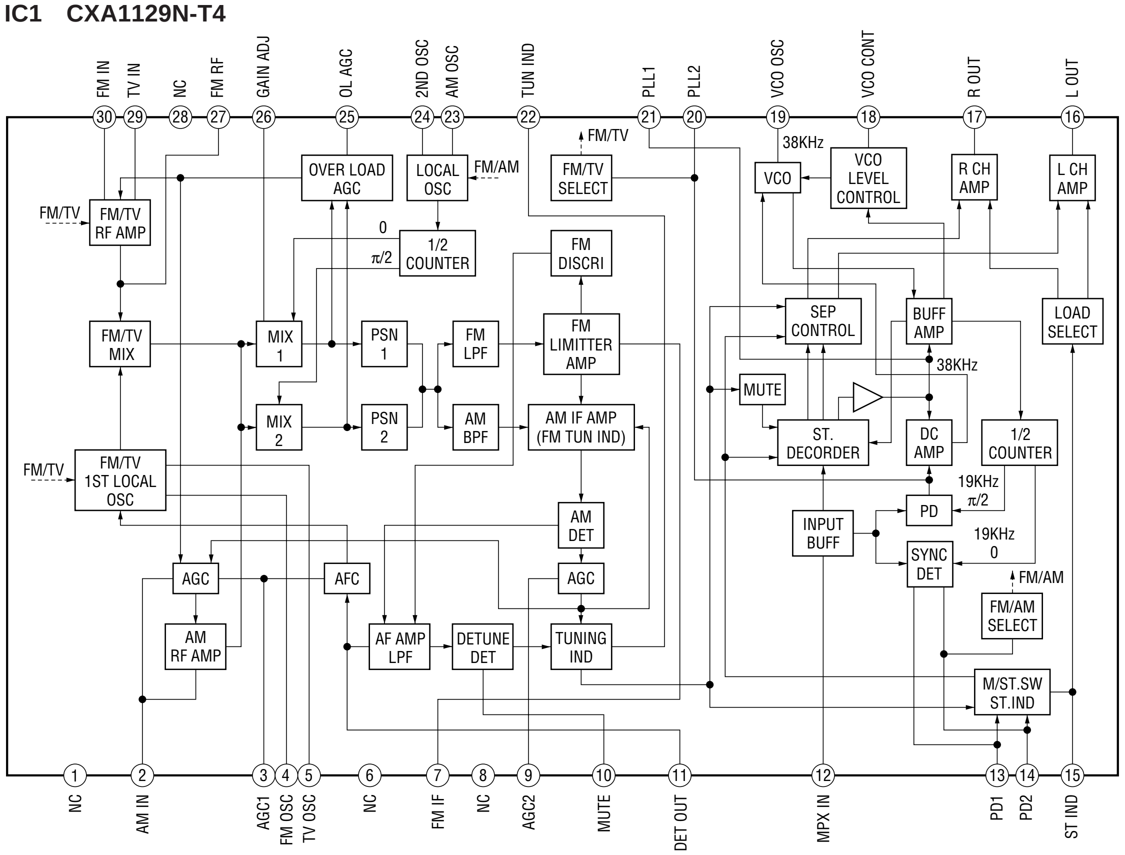
Note on Printed Wiring Board:
- ○—— : parts extracted from the component side.
- —— : parts extracted from the conductor side.
- [ ]← : indicates side identified with part number.
- △ : internal component.
- ░░ : Pattern from the side which enables seeing.

4-3. SCHEMATIC DIAGRAM



- **IC Block Diagram**

IC1 CXA1129N-T4

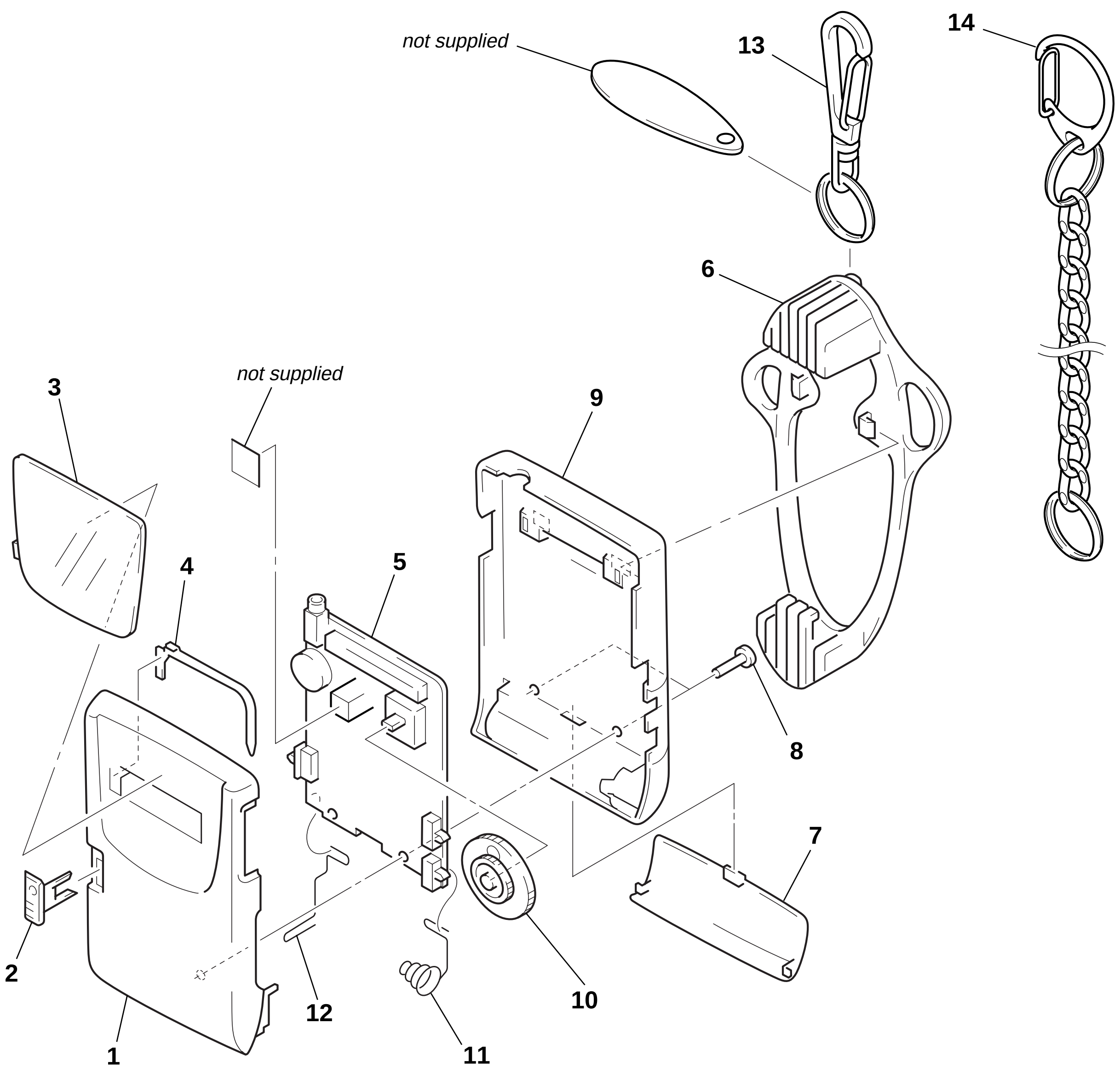


Note on Schematic Diagram:

- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $^{1}/_{4}$ W or less unless otherwise specified.
- △ : internal component.
- ▭ : panel designation.
- B+ : B+ Line.
- ▭ : adjustment for repair.
- Power voltage is dc 1.5 V and fed with regulated dc power supply from battery terminal.
- Voltages are dc with respect to ground under no-signal (detuned) conditions.
  no mark : FM
  ( ) : AM
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ⇨ : FM
  ➡ : AM

SECTION 5
EXPLODED VIEW

NOTE:
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ Parts Color ↑ Cabinet's Color
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Accessories and packing materials are given in the last of the electrical parts list.



Ref. No.	Part No.	Description	Remark
1	3-011-422-11	CABINET (FRONT) (BLUE)	
1	3-011-422-21	CABINET (FRONT) (VIOLET)	
2	3-011-425-01	KNOB (POWER) (BLACK) . . . (VIOLET)	
2	3-011-425-21	KNOB (POWER) (YELLOW) . . . (BLUE)	
3	3-011-741-31	PLATE, TRANSPARENT (for BLUE)	
3	3-011-741-41	PLATE, TRANSPARENT (for VIOLET)	
4	3-011-430-01	POINTER (ORANGE) . . . (BLUE)	
4	3-011-430-11	POINTER (BLUE) . . . (VIOLET)	
* 5	A-3683-018-A	MAIN BOARD, COMPLETE	
6	3-028-092-02	GUARD (BLUE) . . . (VIOLET)	
6	3-028-092-12	GUARD (YELLOW) . . . (BLUE)	
7	3-011-424-31	LID, BATTERY CASE (BLUE)	
7	3-011-424-41	LID, BATTERY CASE (VIOLET)	
8	7-685-105-14	TAPPING +P 2X8 NON-SLIT	
9	3-011-423-41	CABINET (REAR) (BLUE)	
9	3-011-423-51	CABINET (REAR) (VIOLET)	
10	3-011-429-01	KNOB (TUNE)	
11	3-011-432-01	SPRING, BATTERY	
12	3-011-431-01	TERMINAL, BATTERY	
13	3-028-093-01	CLIP	
14	3-036-709-01	CHAIN	

MAIN

SECTION 6
ELECTRICAL PARTS LIST

NOTE:
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL: Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F: nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u: μ, for example:
  uA. . : μA. . uPA. . : μPA. .
  uPB. . : μPB. . uPC. . : μPC. .
  uPD. . : μPD. .
- CAPACITORS
  uF: μF
- COILS
  uH: μH

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark
*	A-3683-018-A	MAIN BOARD, COMPLETE **********************			
		< BAND PASS FILTER >			
BPF1	1-236-711-21	FILTER, BAND PASS			
		< CAPACITOR >			
C2	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C3	1-126-163-11	ELECT	4.7uF	20%	50V
C4	1-163-181-00	CERAMIC CHIP	100PF	5%	50V
C5	1-163-220-11	CERAMIC CHIP	3PF	0.25PF	50V
C6	1-163-143-00	CERAMIC CHIP	0.0012uF	5%	50V
C7	1-162-638-11	CERAMIC CHIP	1uF		16V
C8	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C10	1-164-222-11	CERAMIC CHIP	0.22uF		25V
C11	1-163-023-00	CERAMIC CHIP	0.015uF	5%	50V
C12	1-163-023-00	CERAMIC CHIP	0.015uF	5%	50V
C13	1-162-638-11	CERAMIC CHIP	1uF		16V
C14	1-162-638-11	CERAMIC CHIP	1uF		16V
C15	1-163-087-00	CERAMIC CHIP	4PF		50V
C16	1-162-638-11	CERAMIC CHIP	1uF		16V
C17	1-163-104-00	CERAMIC CHIP	30PF	5%	50V
C18	1-124-257-00	ELECT	2.2uF	20%	50V
C19	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C20	1-104-665-11	ELECT	100uF	20%	16V
C21	1-126-163-11	ELECT	4.7uF	20%	50V
C22	1-104-942-11	ELECT	1uF	20%	50V
C23	1-104-396-11	ELECT	10uF	20%	16V
C24	1-104-942-11	ELECT	1uF	20%	50V
C25	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C26	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C27	1-126-154-11	ELECT	47uF	20%	6.3V
C28	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C29	1-124-463-00	ELECT	0.1uF	20%	50V
C30	1-124-463-00	ELECT	0.1uF	20%	50V
C31	1-124-442-00	ELECT	330uF	20%	6.3V
C32	1-126-154-11	ELECT	47uF	20%	6.3V
C33	1-126-154-11	ELECT	47uF	20%	6.3V
C34	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C35	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C37	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C38	1-163-085-00	CERAMIC CHIP	2PF		50V
		< TRIMMER >			
CT1	1-151-700-11	CAP, VAR			
		< VARIABLE CAPACITOR >			
CV1	1-151-700-11	CAP, VAR (TUNE)			
		< DIODE >			
D1	8-719-991-33	DIODE 1SS133T-77			
D2	8-719-991-33	DIODE 1SS133T-77			
		< JACK >			
HPJ1	1-563-857-11	JACK, HEADPHONE (🎧)			
		< IC >			
IC1	8-752-061-76	IC CXA1129N-T4			
IC2	8-759-822-48	IC LA4537M			
		< SHORT >			
J1	1-216-296-00	SHORT	0		
J2	1-216-295-00	SHORT	0		
J3	1-216-295-00	SHORT	0		
J4	1-216-295-00	SHORT	0		
J5	1-216-295-00	SHORT	0		
		< COIL >			
L1	1-428-781-11	COIL, AIR-CORE			
L2	1-428-780-11	COIL, AIR-CORE			
L3	1-406-477-11	COIL (AM OSC)			
L4	1-406-476-21	COIL (VCO)			
L5	1-402-609-11	ANTENNA, FERRITE-ROD (AM)			
L6	1-428-779-11	COIL, AIR-CORE			
L7	1-409-382-11	COIL, TRAP			
		< RESISTOR >			
R1	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R2	1-216-034-00	METAL CHIP	240	5%	1/10W
R3	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R4	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R5	1-216-049-11	RES, CHIP	1K	5%	1/10W
R6	1-216-311-00	METAL CHIP	6.8	5%	1/10W
R8	1-216-304-11	METAL CHIP	3.3	5%	1/10W
R9	1-216-304-11	METAL CHIP	3.3	5%	1/10W
R10	1-216-073-00	METAL CHIP	10K	5%	1/10W
		< VARIABLE RESISTOR >			
RV1	1-241-890-11	RES, VAR, CARBON 20K/20K (VOL)			

Ref. No.	Part No.	Description	Remark
		< SWITCH >	
S1	1-571-478-11	SWITCH, SLIDE (FM SENS)	
S2	1-571-478-11	SWITCH, SLIDE (BAND)	
S3	1-571-478-11	SWITCH, SLIDE (POWER)	

****

ACCESSORIES & PACKING MATERIALS
****

3-866-767-11	MANUAL, INSTRUCTION (ENGLISH) (US)	
8-953-342-99	HEADPHONE, STEREO MDR-24//C5SET	

9-926-998-11

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Personal A&V Products Company

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